THIELE'S BRAZILIAN LAND SNAILS

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The principal purpose of this paper is to review the exceedingly valuable data, on the classification of South American pulmonates, which have been contributed by Dr. J. Thiele in his recent paper "Ueber einige brasilianische Landschnecken" (1927, Abh. Senckenberg. Naturf. Ges. 40, pp. 307-399, pl. 26). Incidentally, I wish to include a few additional notes on the nomenclature of the groups discussed in earlier papers of my own: (1925, Naut. 38, pp. 86-89) and (1925a, Oc. P. Mus. Zool. Univ. Mich., no. 156; and 1926, no. 167).

Haplotrematidae

Although the radula (cf. Thiele, text fig. 7) in this family also appears to indicate a close relationship with the Zonitidae (rather than with the Achatinidae), the absence of pedal grooves separates it decidedly from the Systrophiidae (see below).

Haplotrema, subg. *Geomene* Pils. (Apr. 22, 1927, Proc. Cal. Acad. Sci. 16, p. 169), author's type *Helix concava* Say. Pilsbry's name is probably prior to Thiele's *Proselenites* (pp. 312, 313; December, 1927?), with the same genotype (now chosen).

Systrophiidae

Now that Dr. Thiele has proven the position of *Systrophia,* this family name is much preferable to my term, Scolodontidae, which was founded on an admittedly dubious group.

Systrophia Pfr., s. s. Dr. Thiele (text-fig. 6) shows conclusively that the radula of *S. systropha,* with the formula

25-1-1-1-25 is very similar to that found in the next group. Incidentally, his text-fig. 5 of the dentition of *Polygratia polygrata* (Born) certainly does present a Helicid facies.

Systrophia, sect. *Systrophiella* H. B. B. (1925a). Although I named this group on account of its close resemblance to *Systrophia,* I did not dare approach the two until the supposed relationship between *Systrophia* and *Polygyratia* had been proven false. The thinner and more transparent shells of *Systrophiella* seem reason enough for its retention as a section, at least until more is known of the anatomy of *Systrophia* s. s. Some of the species of this section, for example *Syst. starkei* (H. B. B.), approach rather closely *Happia* s.s. (see below), but differ in their impressed sutures.

Systrophia, subg. *Entodina* Ancey. Thiele says that the radula of *S. reyrei,* with the formula 15-1-1-1-15 is quite similar to that of *Systrophia* s.s., but gives no figure. *S. (Entodina) exigua* Thiele (p. 320) is a species of unknown habitat.

Systrophia, subg. *Punctodiscops* H. B. B. (1925a). This is a very distinct group.

Microhappia Thiele. This generic name, proposed for *M. brasiliensis* Thiele, may also include *Zonites implicans* Guppy, from Trinidad and Venezuela (Cf. 1925a, p. 29).

Happia, s.s. From Thiele's text-fig. 2, the radula of *H. vitrina* is more like that of *Systrophia* than like that of *Happiella.* However, it seems best to retain Thiele's line of division between the two genera until more is known of their anatomy. *H. microdiscus* "Bttg." Thiele is another species without locality.

Happia, sect. *Payenia* Mabille et Rochebrune (1889, Miss Sci. Cap Horn, vol. 6, pt. H, p. 25), monotype *Helix saxatilis* Gld. (1846, Proc. Boston Soc. Nat. Hist. 2, p. 171; 1856, U. S. Wilkes Exp., Moll. Atlas, pl. 3, fig. 33), from Tierra del Fuego. The external appearance of both the animal and shell of *Payenia* (which I missed in my 1925a review), must be similar to that of *Happia* s.s. Until something is known of its internal anatomy (as well as its

exact date of publication), it had best be included in *Happia* Bgt. (March, 1889).

Happia, sect. *Prohappia* Thiele (1927, p. 313), monotype *Helix besckei* Dkr. (1847, Zeit. Mal. 4, p. 81), from Brazil. This group seems to combine a shell and animal similar to that of *Happia* s.s., with a radula (Theile, p. 309) like that of the next group.

Happia, sect. *Happiella* H. B. B. In this group, Thiele gives brief descriptions and figures of his *H. grata* from Brazil and *H. glaberrima* from Venezuela. Unfortunately, he neglects to compare them with any of the previously described species, and certainly presents no chyaracters that will keep *H. glaberrima* out of the synonymy of *H. guildingi* (Bland).

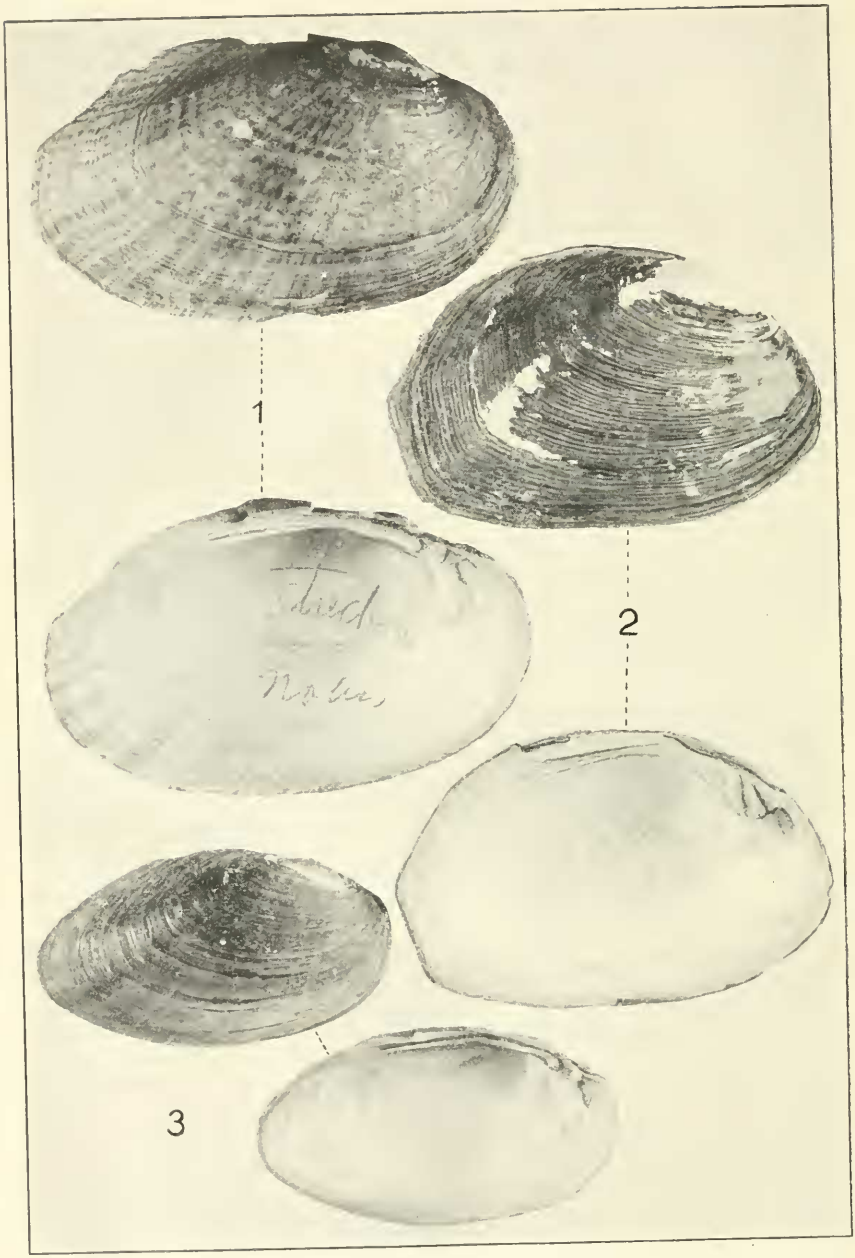
Guestieria Crosse (1872). Thiele uses this very distinct genus as a subdivision of *Happia,* which it antedates by 17 years.

Tamayoa H. B. B. (1925a), with section *Tamayops,* new: type *Happia banghaasi* Thiele (1927, p. 319), from Espirito Santo, Brazil (type locality). The radula (Thiele, text-fig. 4) and general form of *T. banghaasi* are much as in *Tamayoa* s.s. (1925a, p. 34), but the absence of the spiral keel, which constricts the umbilicus of *T. trinitaria* (Smith), would seem to require more than specific recognition. As I have already pointed out (l. c.), the fimbriate laterals of *Tamayoa* immediately separate this genus from any other in the Systrophiidae; *Guestieria* also has multicuspid inner teeth, but they are apparently quite different in form.

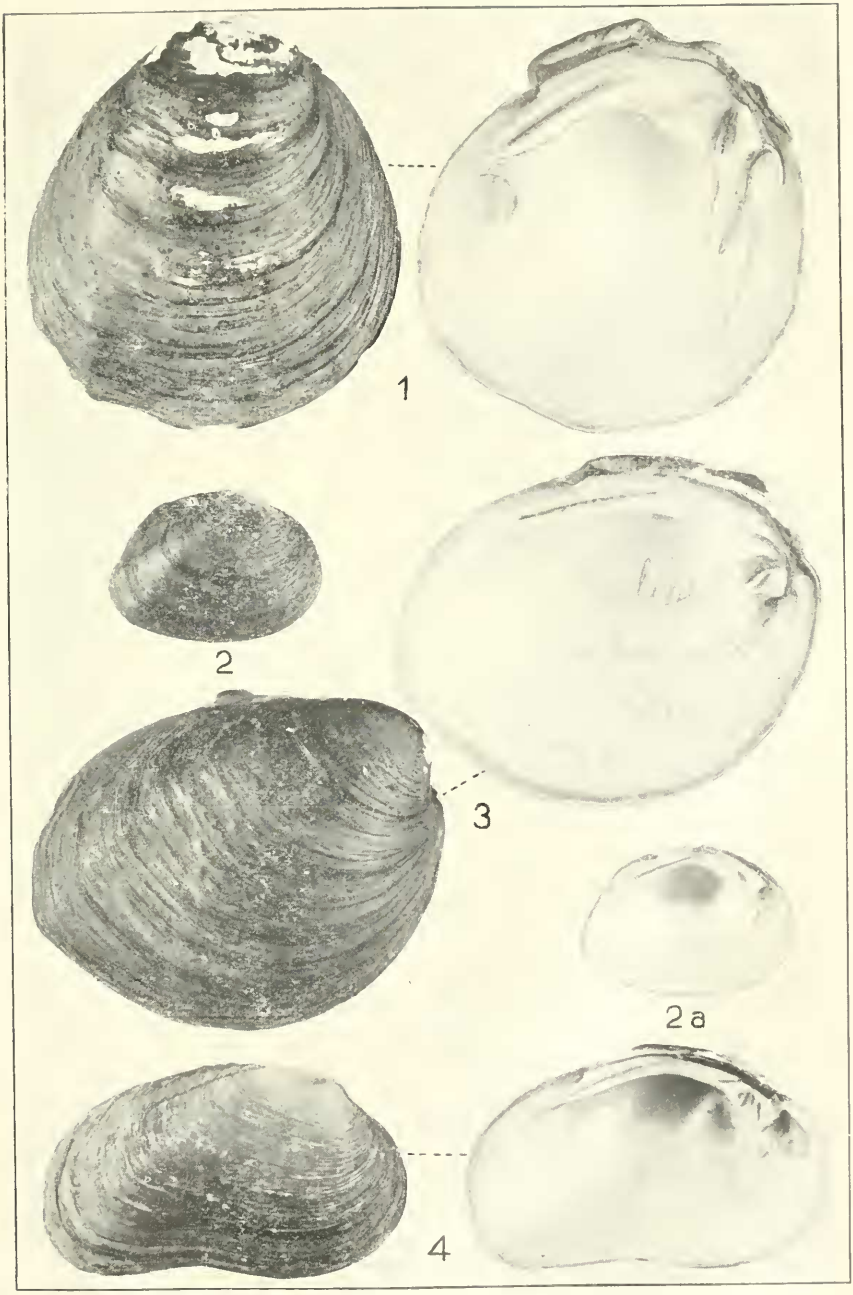
?*Martinella* Jouss. Thiele describes a new species, *M. prisca* (p. 318) from Brazil; the systematic position of the genus still remains dubious.

Streptaxidae

Streptaxis Gray, s.s. Thiele adds two new species: *S. totostriatus* and *S. jheringi* (both on p. 317); the latter is from Brazil.



1. LAMPSILIS STRECKERI Frierson. 2 ELLIPTIO SAJENSIS Frierson.
3 LAMPSILIS WRIGHTIANA Frierson.



1 PLEUROBEMA ALDRICHI Frierson.
2. P. FICTUM Frierson.
3. P. MARSHALLI Frierson.
4. ELLIPTIO HARICOTTI Frierson.